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

(11) **EP 2 037 338 A2**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
18.03.2009 Bulletin 2009/12

(51) Int Cl.:
G04G 11/00 *(2006.01)* ***G04C 19/00*** *(2006.01)*

(21) Application number: **08252883.7**

(22) Date of filing: **29.08.2008**

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

(30) Priority: **07.09.2007 GB 0717382**

(71) Applicant: **Worlds Apart LTD**
Trekenning, St. Columb Major,
Cornwall, TR9 6SX (GB)

(72) Inventor: **Shinner, Neil**
Trekenning, St Columb Major
Cornwall, TR9 6SX (GB)

(74) Representative: **Wood, Graham**
Bailey Walsh & Co
5 York Place
Leeds LS1 2SD (GB)

(54) **Light and time device**

(57) There is provided a device which includes a clock mechanism and a display, the condition of which can be changed as a result of a predetermined time being reached and/or user interaction. The device may also include at least one light source, the condition of which can be changed simultaneously with that of the image. This allows the user of the device to view the display and determined whether or not an action is required to be performed at that time.

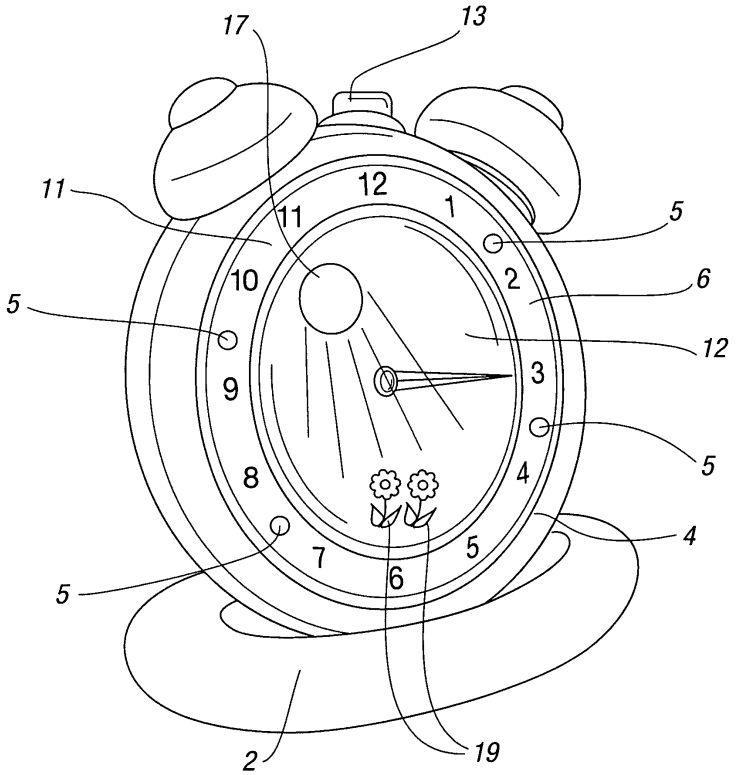

FIG. 1a

EP 2 037 338 A2

Description

[0001] The invention to which this application relates is apparatus which can be used to provide a lighting effect and preferably, one or more further effects thereby improving the utility of the same to the user.

[0002] The provision of devices which can be used to create a night light or torch effect, is known and the applicant, in their copending patent application EP1811226, discloses one form of this product.

[0003] There is also a need for persons when sleeping to be aware of the time when they wake and/or go to sleep. Clocks can be provided which have an alarm function, but the alarm may not be heard or, if heard, the person may go back to sleep. Furthermore if the clock is used by a child they may not be able to easily read the time and may therefore misinterpret the time shown such that they may get up at the wrong time or not get up at the right time.

[0004] The aim of the present invention is therefore to provide an effective device which provides a range of functions, each of which are preferably usable at the same location and at the same time, and in particular, to provide a device which provides said functions in a manner which is effective and attractive for use for children.

[0005] In a first aspect of the invention, there is provided a time device, said device including a body with a clock mechanism, and a display for representing a time generated by the clock mechanism and wherein at least a portion of the display is caused to change in appearance, as a result of the time at an instant matching at least one predetermined time setting of the device and/or as a result of user interaction with the device.

[0006] In one embodiment the predetermined function of the device is a time alarm setting. In one embodiment the time setting is input at the time of manufacture of the device or preferably can be selectively input by the user of the device.

[0007] In one embodiment the display appearance can change from a first condition to a second condition as a result of user interaction with the device and subsequently change from the second condition to the first condition as a result of a predetermined time setting being reached. In one embodiment the user interaction is to set the device alarm, and the time setting is the time at which the alarm is due to be triggered.

[0008] In one embodiment, the colour of the display and/or the image of the display changes when a particular time or time period is reached.

[0009] In one embodiment, the display incorporates the image of at least one character, and a portion of the character is caused to change when a particular time or time period is reached.

[0010] In one embodiment, the portion of the character which changes is the face of the character. In addition or alternatively the colour of at least a portion of the image changes.

[0011] In one embodiment, the display further incorporates a means for indicating the particular time at that instant.

[0012] In one embodiment, the means for indicating the time, incorporate the hour numbers located in a circular pattern and at least one hand which is caused to move with respect to the hour numbers by the clock mechanism.

[0013] In one embodiment only one hand is provided as it is found that the single hand, in conjunction with the change in the image display, is sufficient to provide the required time information.

[0014] In one embodiment, the body includes at least one light source and, typically the control of the light source is achieved via a switch which can be actuated by the user of the device.

[0015] In addition, or alternatively, the operation of the light source can be performed simultaneously with the change in condition of the display. In on embodiment the at least one light source is witched on when the user interacts with the device and is switched off when a predetermined time setting is reached.

[0016] Alternatively the at least one light source is switched on an d off automatically, with respect to the clock mechanism such that when a particular time is reached, the light is switched on and when a further time is reached, the light source is switched off. Typically, the light source acts as a night light and the first and second times, will represent the hours of darkness during which it is of benefit to have the light source switched on.

[0017] Typically, the change in the display image, is as a result of the particular time at that instant and is an automatic change in accordance with device settings.

[0018] In one embodiment, the display and/or at least one light source condition is generated such that the user of the device can determine, from viewing the image and/or light source conditions, whether it is time to perform a particular function, such as, for example, to get out of bed.

[0019] In one embodiment the device body is placed in a base, said base connected to a power supply and having contact means which engage with electrical contacts on the body to provide power to the same when in position on the base.

[0020] In one embodiment the body incorporates a disc or other movable object which, upon a predetermined event occurring is moved from one position to another.

[0021] Typically the movement is rotational about an axis mounted substantially centrally of the display.

[0022] In one embodiment the disc is moved so as to selectively move a portion to be viewable externally of the device. In one embodiment the said portion is moved so as to be viewable through an aperture in a fixed part of the display.

[0023] In one embodiment the movable disc is mounted with respect to the external viewing face of the display, to the rear of a fixed part of the display.

[0024] In one embodiment the movement of the disc is controlled via connection to a motor, the operation of

which is commenced upon user interaction with the device and/ or a predetermined time setting.

[0025] Typically the disc is positively retained in the first or second position by the motor and the mechanical connection between the motor and the disc.

[0026] Typically the display is changeable between a first display provided to be viewable in daytime hours, and a second display provided to be viewable in night time hours, such that at the interface between daytime and nightime and nightime and daytime, the change in display indicates that it is time to go to sleep or time to wake up respectively simply by viewing the display rather than having to actually tell the time.

[0027] In one embodiment the predetermined event may be a change in light condition in the surrounding environment. In this case the device includes a sensor to detect the change in light condition automatically, such that light to dark causes the "nightime" display to be shown and the detected change from dark to light causes the "daytime" display to be shown.

[0028] In one embodiment the body includes a power source therein or is clockwork driven.

[0029] In a further aspect of the invention there is provided a device which changes condition as a result of at least one predetermined time being reached, said device including a body, a clock mechanism, a viewable image, and at least one light source, and wherein the viewable image each change condition upon said predetermined time being reached.

[0030] In one embodiment the predetermined time is an alarm setting of the clock mechanism. In one embodiment the condition of the at least one light source and image changes at another time to the predetermined time. Typically the said other time is defined by user interaction with the device when setting the alarm setting for a particular time. Typically the light source is change from an off to an on condition at the time of user interaction and from an on to an off condition when the alarm setting time is reached. The change in condition may not be instantaneous but will occur within a matter of minutes of the predetermined time being reached.

[0031] Specific embodiments of the invention will now be described with reference to the accompanying drawings, wherein:-

Figures 1a -c, illustrate a first embodiment of the invention; and

Figure 2 illustrates the mechanism within the body of the device which allows the image display to be changed.

[0032] Referring now to the drawings of Figures 1a-c, in both cases, the apparatus comprises a base 2 and a body 4 which is located on the base as shown.

[0033] In one embodiment, the base may include an electrical connection or contacts with which the body is connected when it is placed in position on the base. Alternatively, the body can be provided with a direct electrical connection to a mains power supply, or yet further, the body or base may be provided with a power source located therein.

[0034] In any case, in one embodiment the body 4 may be provided with a light source located therein and at least a portion of the housing of the body is formed so as to allow the light to pass therethrough, preferably generating a glowing effect 8 externally of the body and thereby providing a night lighting effect when the light source is switched on. The light source and power supply used for the same, will typically be selected so as to allow the light source to be illuminated safely for a significant period of time such as during the hours of darkness. In the embodiment shown in Figures 1a-c the body includes the light sources 5, the operation of which will be described subsequently.

[0035] In addition, the body incorporates a clock mechanism within the interior, which clock mechanism may be operated and controlled thereby allowing predetermined functions, such as an alarm time to be set.

[0036] In addition, on at least one face 6 of the body, there is provided a display 10 which, in this example, includes the hour numbers in annular ring 11 and an image 12 which has been selected to represent a particular scene which is of attraction to children. A "hand" 9 or hands can be powered to move by the clock mechanism to move round the circular pattern of hours so as to represent the particular time at that instant.

[0037] In addition, and in accordance with the invention, the display image 12 is provided to change condition when a particular predetermined time is reached and/or as a result of user interaction via operating means 13. For example, in Figure 1a, the display image 12 condition shown, is a day time image, as the sun 17 in the image 12 is shining and flowers 19 are shown. In Figure 1c a night time image is shown by the moon 18 and stars 20. This display image would be selected to be generated when the child using the device, is meant to be asleep. The image shown in Figure 1a is to be displayed during daylight hours have been reached and it will be seen that this image is much lighter and therefore indicates to a child that they should get up out of bed if, for example, the child views the image 12 of Figure 1a when they wake in the morning. If the child was to wake and the image 12 of Figure 1c was still shown they would know immediately that it was not yet time to wake up.

[0038] Figure 1b illustrates a sequence of change of the display image in accordance with one embodiment of the invention with the image 12 shown comprising a first portion 12' of the nighttime image of Figure 1c and second portion 12" of the daytime image of Figure 1a and divided by interfaces 22. This intermediate display of Figure 1b occurs briefly at the occurrence of a predetermined time such as an alarm time in the morning in which case the interface 22' moves in the direction of arrow 24 or upon user interaction such as by the user setting the alarm at night via the means 13 in which case

the interface 22' moves in the direction of arrow 26 so as to cause the appropriate image to be displayed.

[0039] Typically, regardless of the particular image displays which are selected, the change in the displays will occur at least once within any given 24 hour period.

[0040] Also, preferably the operation of the light sources 5 can be controlled at the same time as the change of image. For example, when the user interaction via means 13 sets the alarm on an evening, the operation of the means also causes the light sources to be switched on as illustrated in Figure 1c. The light sources then remain on until the alarm time is reached in the morning which causes the image 12 to change and as the daytime image of Figure 1a is shown completely the light sources are switched off.

[0041] In one embodiment, the change in image can be achieved mechanically by moving one image to overlie the other to create the change or to remove the overlying image to create the change. This is now described with reference to Figure 2 which shows the mechanism provided within the body 4 which allows the image 12 to be changed. The mechanism includes a fixed substrate 26 which has a front face on which the first or daytime image is formed and a second substrate on which the second or night time image is formed. The substrate 28 can be moved through a slot 29 in the first substrate 26 by rotation about central axis 30 on which the substrates are mounted. The movement of the substrate 28 is between a first position in which the same is hidden from view behind the first substrate 26, and a second position in which the same lies in front of the first substrate 26 and the image thereon is viewable.

[0042] To commence the movement user interaction is required to move means 13 downwardly. This causes an electrical signal to be sent to motor 32 which drives gear 34 to move the substrate 28 in front of the substrate 26 and hence allow the night time image of Figure 1c to be viewable. At the same time the light sources 5 are illuminated.

[0043] After a period of time has passed, typically overnight, and the clock mechanism has moved and hence rotated a gear 36 when the alarm or another predetermined time is reached, the switch 38 is activated and the motor 32 is operated to move the substrate 28 and hence reveal the daytime image of substrate 26 as shown in Figure 1a.

[0044] Alternatively, the image change may be generated by the use of colour changing inks, and the provision of control means to cause the change of colour to occur.

[0045] Yet further, the change in condition of the image display may be as a result of the switching on or off of a light source such that, for example, when the light source is switched on, a particular image display is created and when the light source is switched off, the alternative image display is viewable.

[0046] It should also be appreciated that although the devices shown in both embodiments have two possible image displays, it is possible that a greater number of image changes can be created in response to user selected time intervals.

[0047] The present invention can therefore utilise the effect of a night light with a time function which, while it may be linked to the use of the device as a night light, provides further, surprising benefits to the user who may typically be a child. It is found that the child will gain confidence by the provision of a relatively soft, glowing light being present during sleep or when attempting to go to sleep whilst also ensuring that the child can have an improved and easier understanding of the time which is being depicted by the device and therefore more easily reach a decision as to whether in fact they should be going to sleep or getting up or starting or finishing another activity.

Claims

1. A time device, said device including a body with a clock mechanism, and a display for representing a time generated by the clock mechanism and wherein at least a portion of the display is caused to change in appearance, as a result of the time at an instant matching at least one predetermined time setting of the device and/or as a result of user interaction with the device.

2. A device according to claim 1 wherein the predetermined time setting of the device is an alarm time setting.

3. A device according to claim 1 wherein the time setting is input at the time of manufacture of the device.

4. A device according to claim 1 wherein the time setting is selectively input by the user of the device.

5. A device according to claim 1 wherein the colour of the display and/or the image of the display changes when a particular time or time period is reached.

6. A device according to claim 1 wherein the colour and/or image of the display changes upon the user activating an alarm time setting function.

7. A device according to claim 1 wherein the image comprises a central changeable portion surrounded by an annular ring on which hour characters are indicated.

8. A device according to claim 1 wherein the display incorporates a means for indicating the particular time at that instant.

9. A device according to claim 8 wherein the means for indicating the time, include at least one hand which is caused to rotate with respect to hour characters

by the clock mechanism.

10. A device according to claim 1 wherein the body includes at least one light source.

11. A device according to claim 10 wherein the operation of the at least one light source is performed in response to a predetermined time setting and/or user interaction with the device.

12. A device according to claim 12 wherein the at least one light source is switched on as a result of user interaction and switched off when a predetermined time setting is reached.

13. A device according to claim 1 wherein the body can be placed in a base, said base provided with, or connected to, a power supply and having contact means which engage with electrical contacts on the body to provide power to the same when in position on the base.

14. A device which changes condition as a result of at least one predetermined time being reached, said device including a body, a clock mechanism, a viewable image, and at least one light source, and wherein the viewable image each change condition upon said predetermined time being reached.

15. A device according to claim 14 wherein the predetermined time is an alarm setting of the clock mechanism.

16. A device according to claim 14 wherein the condition of the at least one light source and image changes at another time to the predetermined time.

17. A device according to claim 14 wherein the said other time is defined by user interaction with the device when setting the alarm setting.

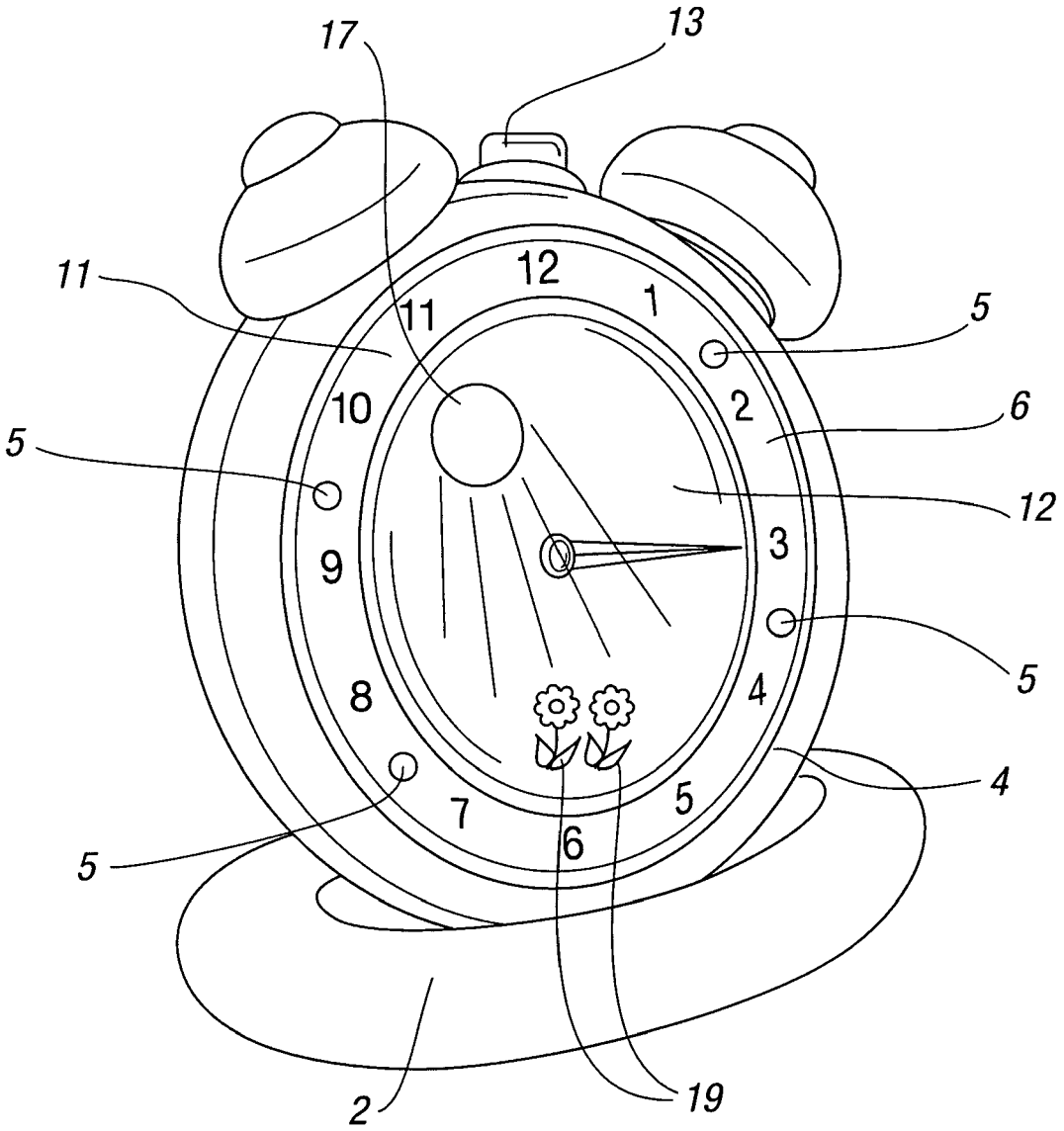

FIG. 1a

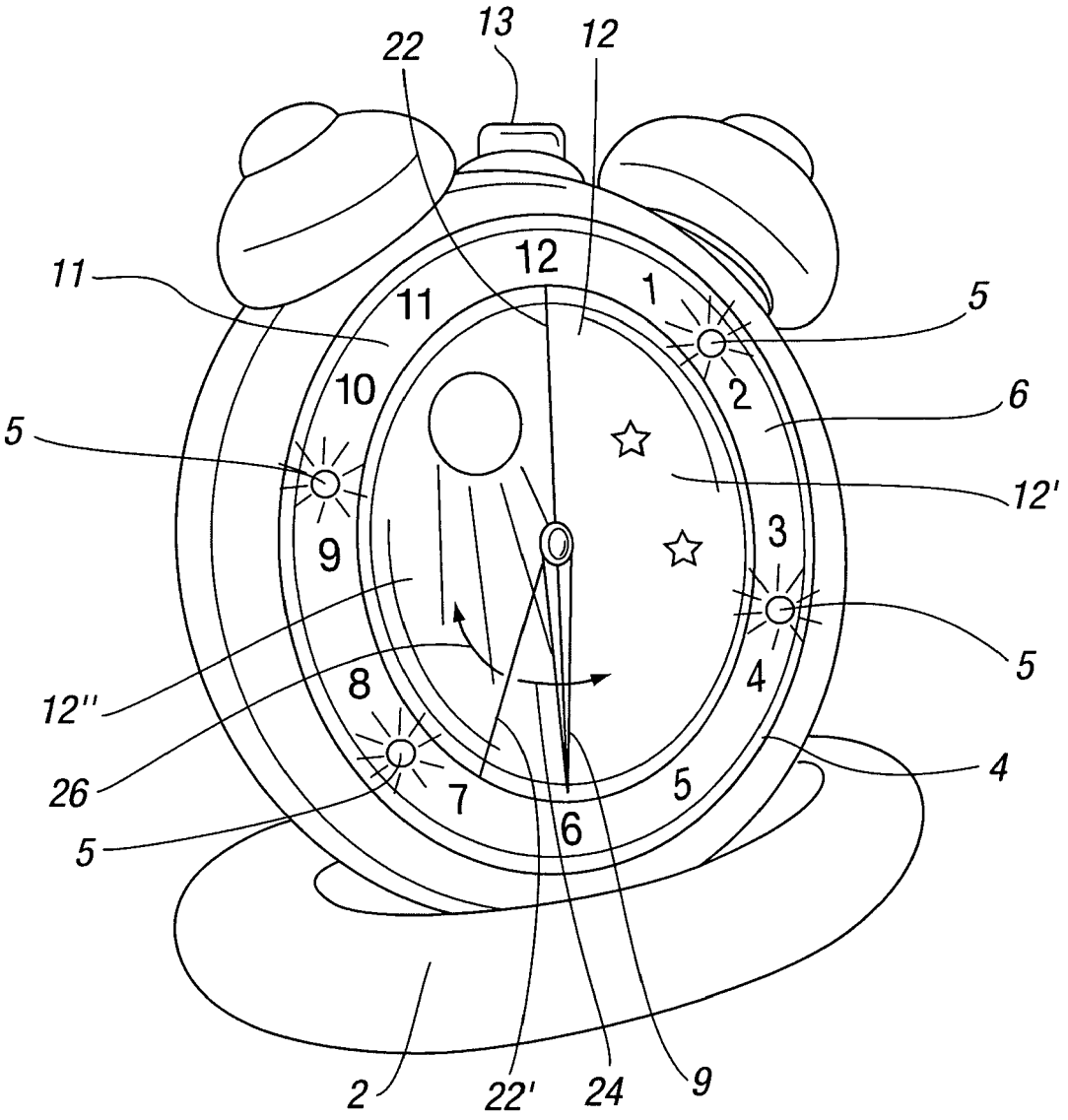

FIG. 1b

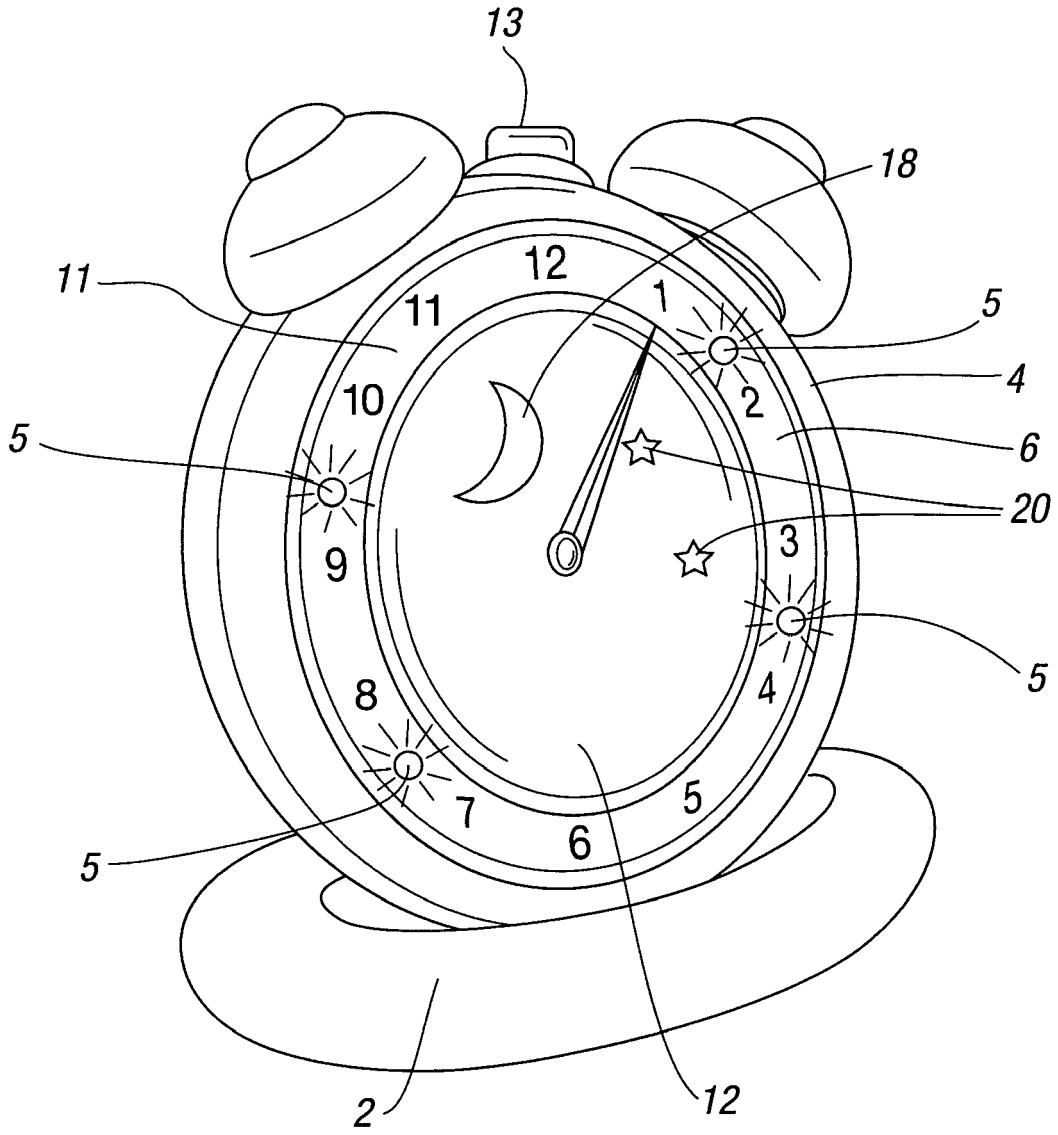

FIG. 1c

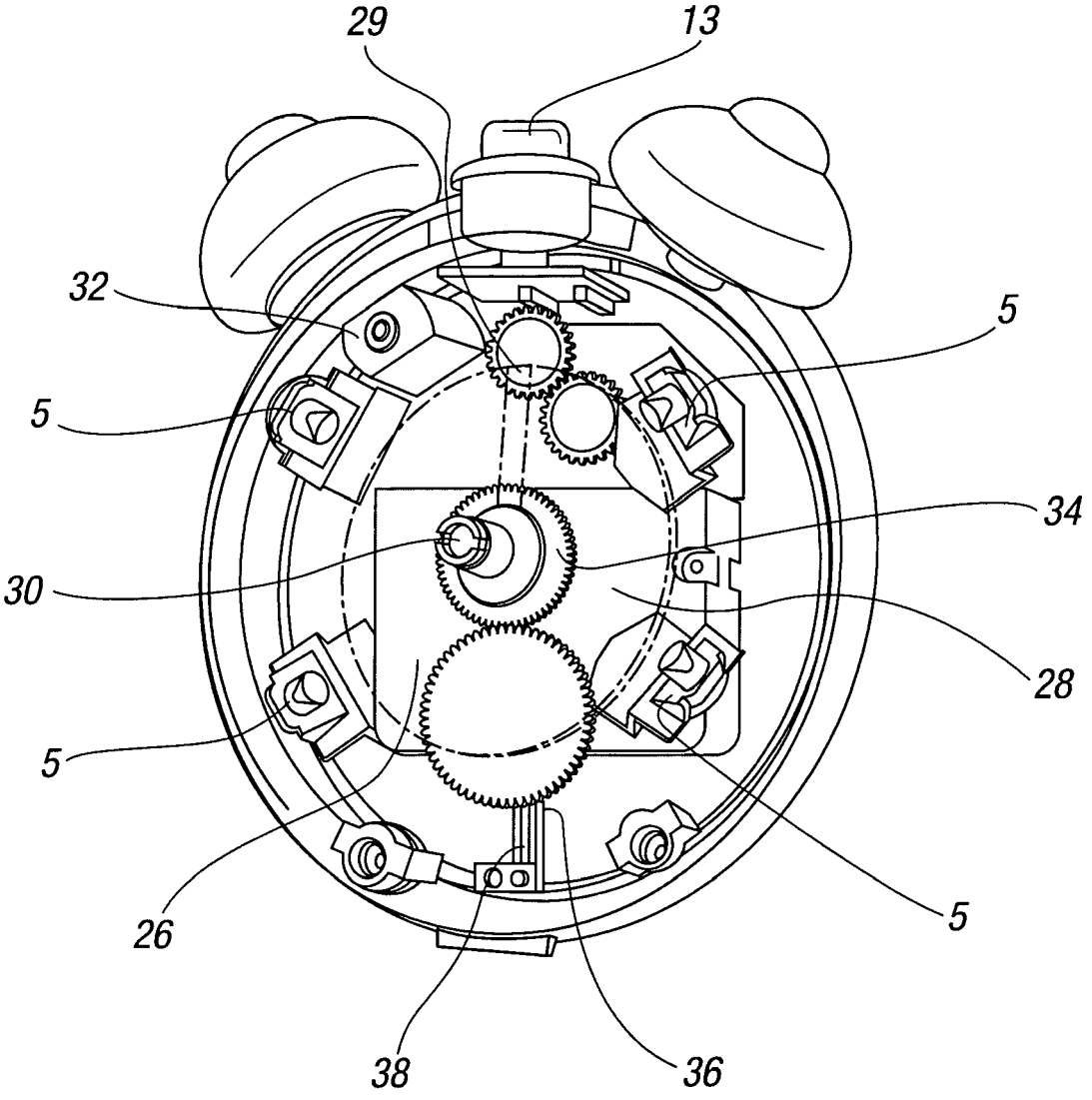

FIG. 2

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

- EP 1811226 A **[0002]**