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(54) **Countdown timer**

(57) A countdown timer for sail races has a second hand moving counter-clockwise, and visual repeaters of the number of minutes left before the race starts. Six-

minutes and three-minutes modes can be chosen in addition to ten-minutes and five-minutes modes.

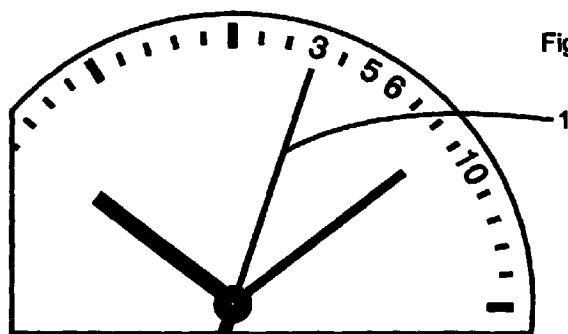


Figure 15

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## Description

[0001] The present invention concerns a countdown timer according to the preamble of claim 1.

[0002] Countdown timers are known, where a second hand, i.e. a hand indicating the seconds left before an expected event takes place, as well as other indicators such as minute counters, allow the user to evaluate the time left before an event such as the start of a race. Such a second hand usually moves clockwise.

[0003] In the particular field of sailing races, it is known to dispose a coloured visual repeater of the number of minutes that are left before the start. The known systems usually put an emphasis on the last ten minutes before the start and on the last five minutes before the start. These systems often use the visual help of a repeater consisting in a series of five circular balls of changing colours, disposed on the analogue dial in an angular sequence between ten o'clock and two o'clock. In these known systems, the user of the timer can only choose between a so-called ten minutes mode, where the timer is activated ten minutes before the start, and a so-called five minutes mode, where the timer is activated five minutes before the start.

[0004] Recent trends in sailing competition rules have introduced six minutes modes and three minutes modes. The known timers cannot take these new modes into account in a practical way, i.e. by allowing the user to choose the various modes in a user-friendly manner.

[0005] They also have the disadvantage of only having a second center hand that moves clockwise. This is a drawback for the user because he cannot easily recognise that the timer function is activated; he tends to believe that the second hand just describes the current time, and not the time left before the start of the race.

[0006] These problems are solved by the features described in the characterising part of claim 1.

[0007] The counter-clockwise movement of the second hand immediately tells the user that the timer function is activated; moreover, the countdown timer according to the invention allows the user, in the process of initialization of the timer, to choose conveniently between various modes by just reading the indication of the center second hand.

[0008] As modes are generally described by their maximum duration, i.e. 10 minutes, 6 minutes, 5 minutes or 3 minutes, the center second hand pointing at respectively 10, 6, 5 or 3 helps the user in the initialization process.

[0009] In a particular embodiment of the invention, the user chooses between the different available modes by repeatedly pressing a pusher that is placed on a usual four o'clock position of the dial of the countdown timer. For instance, a first push on the pusher selects the ten-minutes mode; a second push on the same pusher selects the five-minutes mode; additional pushes select six or three-minutes modes, according to the newest

sailing competition rules.

[0010] In a particular embodiment of the invention, the selection of a mode during initialization of the timer is considered effective after a temporisation delay. The countdown mode is then blocked, unless the user decides to change the mode by an explicit manoeuvre. The advantage of this embodiment is that the very last minutes before a sailing race starts are very important for the competitors, e.g. to choose the best spot to cross the start line. The start line in some cases is drawn by the presence of two floating bodies like buoys, and circumstances like the changing direction of the wind can make it more advantageous to cross the start line close to one of the two floating objects. There are some cases where a skilled competitor has good reasons to change his mind on where to cross the start line. It is also advantageous to cross the start line already at full speed, and essential not to touch another competitor that would happen to be in the way. All the described conditions, that are to be satisfied in the last moments before the race starts, result in the skipper being induced to very quick and urgent sailing manoeuvres, where a pusher of a countdown timer can be accidentally struck by the ship. To avoid the resulting unwanted change of countdown mode, the countdown mode is blocked after the selection, which makes the timer immune to any accidental contacts between the four o'clock pusher and e.g. the tiller, or hull, or any other part of the ship.

[0011] In the case of a foul start, resulting in the mode selection having to be changed, the timer function according to this embodiment can be deactivated. Such deactivation can be commanded by maintaining the pressure on the four-o'clock pusher, or by any other explicit manoeuvre. A typical duration that commands the return to selection mode is one second and a half. It is clear that an accidental contact does not result in a maintained pressure of 1.5 seconds, so the timer function cannot accidentally be deactivated.

[0012] In a particular embodiment of the invention, the countdown timer is equipped with a beeper that emits warning sounds. These warning sounds are known in themselves; in the sailing race environment, they allow the skipper to be constantly updated on the growing imminence of the race start, without having to even take a glimpse at the countdown timer.

[0013] In a particular embodiment of the invention, the countdown timer is equipped with a visual repeater of the number of minutes that are left before the race starts. Such a repeater can consist, in a known manner, of a sequence of regularly spaced balls that can change in colours, the combination of colours depending on the imminence of the race start. The balls spacing can be linear, e.g. in the case of a digital display involving a square or rectangular dial. The balls can also be angularly spaced, in a more common style of visual repeaters that match a circular dial of a classic wristwatch.

[0014] In a particular embodiment of the invention, the

sequence of the colour change of the balls matches the counter-clockwise movement of the second hand.

**[0015]** This last embodiment will now be explained in the following detailed description, based on the enclosed drawing in which:

- Figure 1 to 11 show schematically the visual repeater consisting of five balls on a white timer dial.
- Figures 12 to 15 show how the center second hand symbolically points to a mode.

**[0016]** At ten minutes before the start ( $t = -10'$ ), all five balls are blue, as shown on Figure 1. In this example, the beeper then emits three short beeps.

**[0017]** At nine minutes before the start ( $t = -9'$ ), the first (left) four balls are blue and the extreme right ball is red, as shown on Figure 2. In this example, the beeper then emits three short beeps.

**[0018]** At eight minutes before the start ( $t = -8'$ ), the first (left) three balls are blue and the two right balls are red, as shown on Figure 3. In this example, the beeper then emits three short beeps.

**[0019]** At seven minutes before the start ( $t = -7'$ ), the first two balls are blue and the three right balls are red, as shown on Figure 4. In this example, the beeper then emits three short beeps.

**[0020]** At six minutes before the start ( $t = -6'$ ), only the first ball (extreme left) is blue and all other four are red, as shown on Figure 5. In this example, the beeper then emits three short beeps.

**[0021]** At five minutes before the start ( $t = -5'$ ), all five balls are red, as shown on Figure 6. In this example, the beeper then emits three short beeps.

**[0022]** At four minutes before the start ( $t = -4'$ ), the first (left) four balls are red and the extreme right ball is white, as shown on Figure 7. In this example, the beeper then emits three short beeps.

**[0023]** As the dial is also white, the user witnesses the vanishing of the red colour as the time lapses during the last five minutes.

**[0024]** At three minutes before the start ( $t = -3'$ ), the first three balls are red and the last two balls, on the right side, are white, as shown on Figure 8.

**[0025]** At two minutes before the start ( $t = -2'$ ), the first two balls are red and the three right balls are white, as shown on Figure 9. In this example, the beeper emits two short beeps, reminding the user of the remaining two minutes.

**[0026]** At one minute before the start ( $t = -1'$ ), only the extreme left ball is red, all other four balls are white, as shown on Figure 10. In this example, the beeper emits one short beep. During the last minute and particularly the last ten seconds, the beeper can further keep the user informed as follows:

- at 50 seconds before the start ( $t = -50''$ ) the beeper

emits three short beeps;

- at 40 seconds before the start ( $t = -40''$ ) the beeper emits three short beeps;
- at 30 seconds before the start ( $t = -30''$ ) the beeper emits three short beeps;
- at 20 seconds before the start ( $t = -20''$ ) the beeper emits three short beeps;
- at 10 seconds before the start ( $t = -10''$ ) the beeper emits one short beeps;
- at 9 seconds before the start ( $t = -9''$ ) the beeper emits one short beeps;
- at 8 seconds before the start ( $t = -8''$ ) the beeper emits one short beeps;
- at 7 seconds before the start ( $t = -7''$ ) the beeper emits one short beeps;
- at 6 seconds before the start ( $t = -6''$ ) the beeper emits one short beeps;
- at 5 seconds before the start ( $t = -5''$ ) the beeper emits two short beeps;
- at 4 seconds before the start ( $t = -4''$ ) the beeper emits two short beeps;
- at 3 seconds before the start ( $t = -3''$ ) the beeper emits two short beeps;
- at 2 seconds before the start ( $t = -2''$ ) the beeper emits two short beeps;
- at 1 seconds before the start ( $t = -1''$ ) the beeper emits two short beeps;
- at the start ( $t = 0$ ), the beeper emits one long beep and all five balls are white.

**[0027]** Figures 12 to 15 illustrate the user-friendliness of the initialization of the timer according to the invention.

**[0028]** The center second hand 1 has a different function during the selection of the mode. As the user browses through the sequence of different available modes, by repeatedly pressing the four-o'clock pusher, the center second hand 1 symbolically points to a visual help on the timer dial.

**[0029]** Figure 12 shows the center second hand 1 pointing to a number 10, indicating to the user that if he leaves the four-o'clock pusher as it is, the 10-minutes mode will be chosen.

**[0030]** Figure 13 shows the center second hand 1

pointing to a number 6, indicating to the user that if he leaves the four-o'clock pusher as it is, the 6-minutes mode will be chosen.

[0031] Figure 14 shows the center second hand 1 pointing to a number 5, indicating to the user that if he leaves the four-o'clock pusher as it is, the 5-minutes mode will be chosen.

[0032] Figure 15 shows the center second hand 1 pointing to a number 3, indicating to the user that if he leaves the four-o'clock pusher as it is, the 3-minutes mode will be chosen.

[0033] It should be noted that the visual repeater can also indicate fractions of minutes to the user, if the colours are carried by a rotating disc under the dial, the balls being holes in that dial. However, such indication is of course less precise than the center second hand, which moves counter-clockwise as an indication of the timer function.

## Claims

1. Countdown timer, comprising a center second hand (1), characterised in that:
  - the center second hand (1) moves counter-clockwise;
  - during the initialization of the countdown the user can choose among more than two countdown modes, the center second hand (1) indicating the various modes that can be chosen.
2. Countdown timer according to claim 1, characterised in that
  - the choice between the various countdown modes is made by pushing on a four-o'clock pusher.
3. Countdown timer according to claim 1 or 2, characterised in that the countdown mode is automatically locked after it is selected.
4. Countdown timer according to claim 3, characterised in that the countdown mode can only be unlocked if the user performs an explicit manoeuvre.
5. Countdown timer according to claim 4, characterised in that the explicit manoeuvre consists in maintaining a pressure on a pusher of the timer during a pre-set amount of time.
6. Countdown timer according to one of the preceding claims, characterised in that it is equipped by a beeper, and in that the beeps emitted by the beeper provide information on the time left before a race starts.
7. Countdown timer according to one of the preceding claims, characterised by a visual repeater of the number of minutes left before a race starts, said repeater consisting of balls that change colours.
8. Countdown timer according to one of the preceding claims, characterised in that it is included in a wrist-watch.
9. Countdown timer according to claims 1 to 7, characterised in that it is included in a fixed device on a ship.
10. Countdown timer according to claim 7, characterised in that it comprises a dial whose colour matches the colour of the last appearing balls.

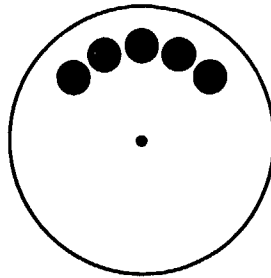


Figure 1

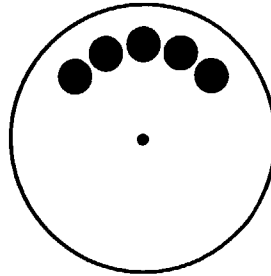


Figure 2

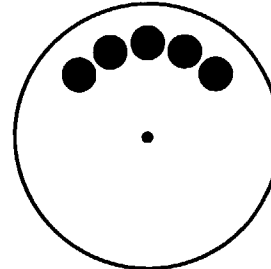


Figure 3

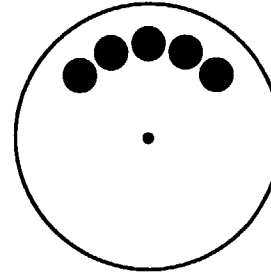


Figure 4

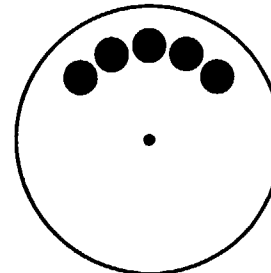


Figure 5

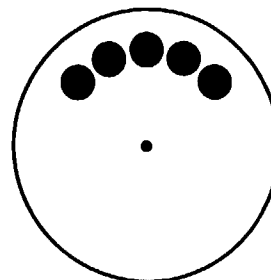


Figure 6

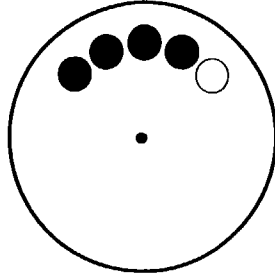


Figure 7

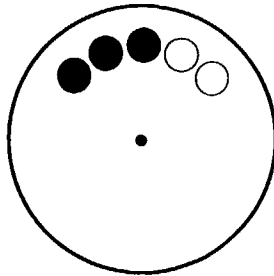


Figure 8

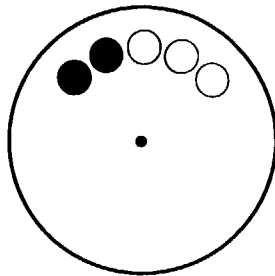


Figure 9

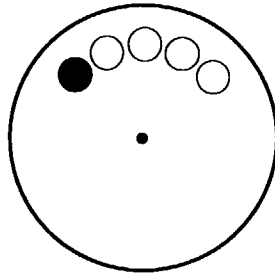


Figure 10

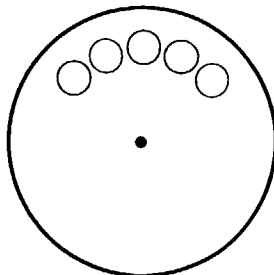


Figure 11

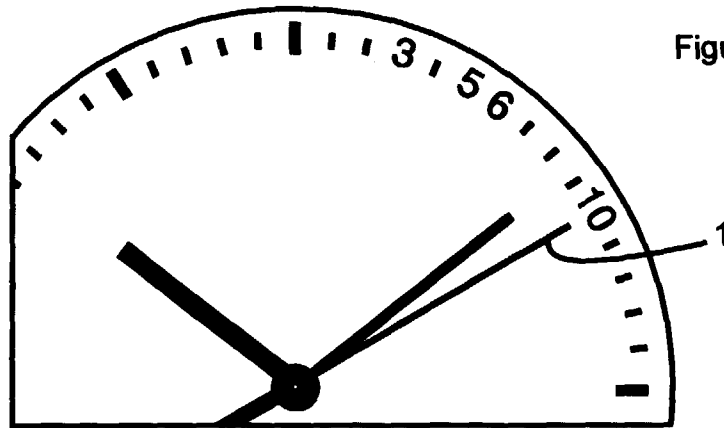


Figure 12

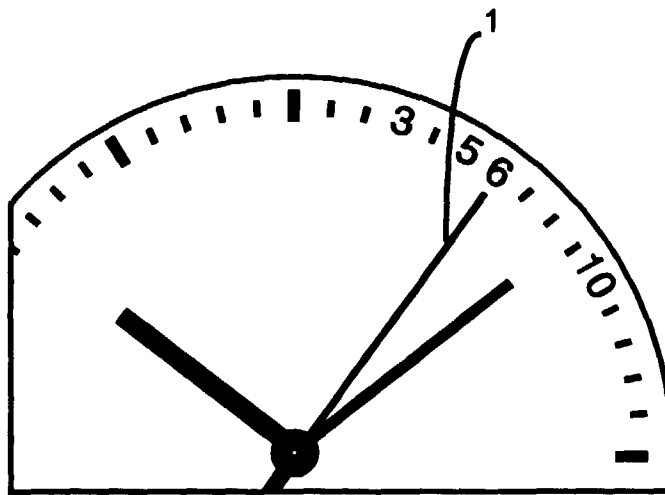


Figure 13

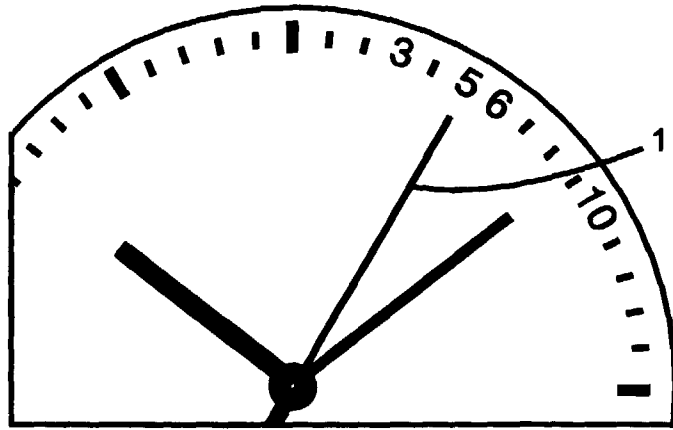


Figure 14

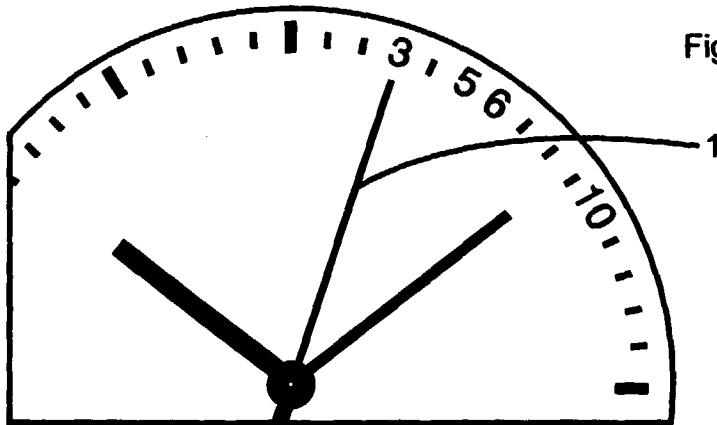


Figure 15



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# EUROPEAN SEARCH REPORT

Application Number  
EP 98 81 0417

| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                             |                                                            |                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------|
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Citation of document with indication, where appropriate, of relevant passages                               | Relevant to claim                                          | CLASSIFICATION OF THE APPLICATION (Int.Cl.6) |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | FR 1 326 515 A (KERESZTES) 14 August 1963<br>* the whole document *                                         | 1                                                          | G07C1/24<br>G04F3/02                         |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | DE 296 09 082 U (WIDMAIER) 14 August 1996<br>* claim 1 *                                                    | 1                                                          |                                              |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | FR 545 459 A (LÉCUYER) 12 October 1922<br>* the whole document *                                            | 1,6                                                        |                                              |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | US 4 238 847 A (DALY) 9 December 1980<br>* the whole document *                                             | 1,7,10                                                     |                                              |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | US 3 980 868 A (THOMPSON)<br>14 September 1976<br>* column 2, line 51 - column 5, line 27;<br>figures 1,2 * | 1,2,8                                                      |                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                             |                                                            | TECHNICAL FIELDS SEARCHED (Int.Cl.6)         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                             |                                                            | G07C<br>G04F<br>G04B                         |
| The present search report has been drawn up for all claims                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                             |                                                            |                                              |
| Place of search<br><b>THE HAGUE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                             | Date of completion of the search<br><b>27 October 1998</b> | Examiner<br><b>Pineau, A</b>                 |
| CATEGORY OF CITED DOCUMENTS<br>X : particularly relevant if taken alone<br>Y : particularly relevant if combined with another document of the same category<br>A : technological background<br>O : non-written disclosure<br>P : intermediate document<br>T : theory or principle underlying the invention<br>E : earlier patent document, but published on, or after the filing date<br>D : document cited in the application<br>L : document cited for other reasons<br>& : member of the same patent family, corresponding document |                                                                                                             |                                                            |                                              |

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