

"ALARM CLOCK"

The present invention relates to an alarm clock provided with a handle.

In such an alarm clock which is known to the Applicants an alarm ON/OFF button is either provided on an upper surface of a case of the clock and is disposed just beneath the handle, or the said button is provided on the rear surface of the case.

In the former arrangement, when the alarm is to be rendered inoperative, the user has to insert his or her finger in a space formed between the handle and the upper surface of the case and has to push down the alarm ON/OFF button, and this operation is difficult to effect. In the latter arrangement, in which the alarm ON/OFF button is provided on the rear surface of the case, when manipulating the button, the clock must be turned round so as to make its back accessible, which is inconvenient.

According, therefore, to the present invention, there is provided an alarm clock having a case provided with means for mounting it on an horizontal surface, the case being provided with a handle one end only of which is pivotally connected to the case, the said one end being mounted for pivotal movement of the handle in a substantially vertical plane when the case is so mounted, the other end of the handle being connected to an alarm operating member which is movable in the said substantially vertical plane, the alarm operating member being movable between ON and OFF positions in which an alarm of the clock is respectively rendered operable and inoperable, the said pivotal

movement of the handle in the said substantially vertical plane with respect to the case effecting movement of the alarm operating member between its ON and OFF positions.

5 As will be appreciated, the present invention enables the operation of the alarm to be simplified and also enables the construction to be simplified, thus reducing manufacturing costs.

10 Preferably, movement of the handle so as to raise its said other end with respect to the case causes the alarm operating member to move into its ON position, movement of the handle so as to lower its said other end with respect to the case causing the alarm operating member to move into its OFF position.

15 Preferably, the said other end of the handle is connected to the alarm operating member by at least one projection on one of these members which fits into a recess or slot in the other member.

20 The alarm operating member may be movably mounted on a movement of the clock which is disposed within the case.

The said other end of the handle is preferably provided with a manually operable portion for moving the alarm operating member between its ON and OFF positions.

There may be releasable holding means for releasably holding the alarm operating member in at least one of its ON and OFF positions. Thus the alarm operating member may have at least one resilient portion which, in at least one of the said positions, engages a detent member so as to be releasably held thereby, the alarm operating member being movable so as to force the resilient portion over the detent member.

In an alarm clock according to the present invention, the handle may be pivoted with respect to the case so as to cause the alarm operating member to move vertically between its ON and OFF positions without the use of any special member, whereby the construction is simple and the costs of production are reduced.

The invention is illustrated, merely by way of example, in the accompanying drawings, in which:-

Figure 1 is a rear side elevation of an alarm clock according to the present invention with parts partially broken away,

Figure 2 is an expanded front view of a portion of the clock shown in Figure 1;

Figure 3 is a sectional view taken substantially along the line III-III of Figure 2, and

Figure 4 is a front view of the alarm clock shown in Figure 1.

Referring to the embodiment of the invention shown in the accompanying drawings, an alarm clock has a front case 1 whose outer surface, as best seen in Figure 4, bears some

resemblance to a cloud, the front case 1 having a rainbow-like handle 2 which extends from a part of the front case 1. As illustrated in Figure 1, the handle 2 has an end portion 2a which is pivotally supported by a bush 3 whose front end is arranged to form a bearing surface in the front case 1.

A movement 4 is secured to the rear surface of the front case 1, and an alarm ON/OFF operating member or "lever" 5 is slidably mounted on the rear surface of a movement cover 4a. The alarm operating member 5, which is connected to the other end 2b of the handle 2, is movable between ON and OFF positions in which an alarm (not shown) of the clock is respectively rendered operable and inoperable, movement of the handle 2 with respect to the front case 1 effecting movement of the alarm operating member 5 between its ON and OFF positions. The front case 1 has a support surface 1a for mounting the clock on an horizontal surface (not shown), the said movement of the handle 2 being pivotal movement thereof in a substantially vertical plane when the case is so mounted. Moreover, the said movement of the alarm operating member 5 between its ON and OFF positions when the front case 1 is so mounted is also movement in the substantially vertical plane.

Movement of the handle 2 so as to raise its end 2b with respect to the front case 1 causes the alarm operating member 5 to move into its ON position, while movement of the

handle 2 so as to lower its end 2b with respect to the front case 1 causes the alarm operating member 5 to move into its OFF position.

As illustrated in Figure 2, the lower end of the alarm operating member 5 is formed with notched grooves 5e, 5f. With this arrangement, resilient portions 5a, 5b, each having a pawl at its tip, are provided on opposite sides of the alarm operating member 5. Positioning pins or detent members 6a, 6b, which protrude from the movement cover 4a engage the resilient portions 5a, 5b and are adapted to releasably hold the latter in their dotted line or OFF position. However, when the alarm operating member 5 is raised into its full line or ON position, pawls at the tips of the resilient portions 5a, 5b are forced over the steps constituted by the detent members 6a, 6b. Similarly, as best shown in Figure 2, when the alarm operating member is in its full line or ON position, the detent members 6a, 6b releasably hold it in this position but do not of course prevent the resilient portions 5a, 5b being forced back over the detent members 6a, 6b when sufficient downward pressure is applied to the handle 2.

An interlocking arrangement 7 is provided between the end portion 2b of the handle 2 and the alarm operating member 5. That is to say, as illustrated in Figures 2 and 3, projections 5c, 5d are formed on the alarm operating member 5 while the adjacent surface of the handle 2 is formed with recessed portions or slots 2c, 2d into which the projections 5c, 5d fit. The rear surface of the end portion 2b of the handle 2 is provided with a manually operable protrusion 2e which serves as an operating button for moving the alarm operating member 5 between its ON and OFF positions. The back end of the bush 3 is supported (by means not shown) in a rear case 8 which is linked through the intermediary of screws 9 to the front case 1. A movable window 8a, through which the protrusion 2e extends, is formed in the rear case 8.

When the handle 2 is in the solid line position shown in Figure 1, the alarm is rendered operable and will thus sound when the alarm time is reached. In the said solid line position of the handle 2, the end portion 2b of the handle 2 is raised and the alarm operating member 5 is also raised through the intermediary of the recessed portions 2c, 2d and the projections 5c, 5d. This causes the detent members 6a, 6b to come in contact with the lower ends of the pawls of the resilient portions 5a, 5b to releasably hold the latter in their full line positions. However, when it is desired

to turn off the sound of the alarm, the handle 2 is suitably pushed down so as to cause the end portion 2a thereof to rotate around the bush 3, whereby the other end portion 2b descends. Thereupon, as shown in Figures 2 and 3, the alarm operating member 5 is lowered by reason of the connection between the recessed portions 2c, 2d and the projections 5c, 5d, at which time the resilient portions 5a, 5b are deflected inwardly. Immediately, the pawls are pushed off over the detent members 6a, 6b, and the alarm operating lever 5 is thus set in its lowered position, thereby preventing operation of the alarm. The protrusion 2e is lowered and moves within the window 8a. It is to be noted, however, that it is possible, if desired, to operate the protrusion 2e as the alarm ON/OFF button. It is not, however, necessarily required to provide this member.

When the handle 2 is slightly raised, the alarm clock itself is not lifted. As a result, lifting forces act on the alarm operating member 5 and the resilient portions 5a, 5b are thereby deflected to such an extent that they are pushed off over the detent members 6a, 6b. The alarm operating member 5 is thus restored to its original raised position, thereby permitting operation of the alarm.

An alarm clock having the above-described construction enables the alarm to be turned OFF or ON simply by pushing the handle 2 down or by raising it, which is a very simple operation. Since, moreover, the interlocking arrangement

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7 is essentially constituted by the projections 5c, 5d and the recessed portions or slots 2c, 2d, the construction is extremely simple and the costs of production are therefore reduced.



(53)

C L A I M S

1. An alarm clock having a case provided with means for mounting it on an horizontal surface, the case being provided with a handle one end only of which is pivotally connected to the case, the said one end being mounted for pivotal movement of the handle in a substantially vertical plane when the case is so mounted, the other end of the handle being connected to an alarm operating member which is movable in the said substantially vertical plane, the alarm operating member being movable between ON and OFF positions in which an alarm of the clock is respectively rendered operable and inoperable, the said pivotal movement of the handle in the said substantially vertical plane with respect to the case effecting movement of the alarm operating member between its ON and OFF positions.

2. An alarm clock as claimed in claim 1 in which pivotal movement of the handle so as to raise its said other end with respect to the case causes the alarm operating member to move into its ON position, movement of the handle so as to lower its said other end with respect to the case causing the alarm operating member to move into its OFF position.

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3. An alarm clock as claimed in claim 1 or 2 in which the said other end of the handle is connected to the alarm operating member by at least one projection on one of these members which fits into a recess or slot in the other member.
4. An alarm clock as claimed in any preceding claim in which the alarm operating member is movably mounted on a movement of the clock which is disposed within the case.
5. An alarm clock as claimed in any preceding claim in which the said other end of the handle is provided with a manually operable portion for moving the alarm operating member between its ON and OFF positions.
6. An alarm clock as claimed in any preceding claim in which there are releasable holding means for releasably holding the alarm operating member in at least one of its ON and OFF positions.
7. An alarm clock as claimed in claim 6 in which the alarm operating member has at least one resilient portion which, in at least one of the said positions, engages a detent member so as to be releasably held thereby, the alarm operating member being movable so as to force the resilient portion over the detent member.



8. An alarm clock substantially as hereinbefore described with reference to and as shown in the accompanying drawings.

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