

Timepiece

Example embodiments of the invention consist of a timepiece, in particular a wristwatch or pocket watch, including a wheel with a case that is visible on the dial or movement side, and is rotated by a toothed wheel driven by a pinion.

Cases containing a wheel or carrousel escapement mechanism are generally placed adjacent to the movement or at the bottom of the casing. It can be interesting for the user to see the operation of a wheel case. Thus, there is generally an opening in the dial through which one can see the operation of the case. The example embodiments consist of making the operation of the case even more visible, by raising it up to bring it adjacent to the dial, without stopping the timepiece working. The user will thus be able to make the wheel case rise up and see the said wheel working.

In accordance with a first aspect of the present invention, there is provided a timepiece comprising: a wheel with a case having a visible dial or movement side, and which is rotatable by a toothed wheel driven by a pinion; mechanisms by which said case can be moved axially between a low position and a high position; and a lever activated by a push-button or an autonomous control applying pressure on the movement mechanisms of the case, bringing the case to its high position against the action of a spring which brings said case back to its low position.

The mechanisms by which the case is moved axially between a low position and a high position may include a sliding support on columns, the case being mounted on the support, by means of an adjustable support or ring.

The height of the pinion driving the toothed wheel of the case may be such that it can drive the case without interruption as it moves between its high position and its low position.

The lever may be significantly parallel to the case, and may move the centre of the columned support from underneath when it is activated by pressure applied on a pin.

The free end of the lever may be confined between the columned support and a stepped pin, which will make it possible to bring the case back to its low position under the action of the spring when no pressure is applied to the pin activated by the push-button.

The drawings show a method of construction of the timepiece that is the subject of the invention, as an example.

In the drawings:

- Figure 1 is a view in perspective of a part of the timepiece, showing a case containing a wheel or carrousel escapement mechanism.,

- Figure 2 is a section through the case according to the line II-II of figure 1, the case being in the low position,
- Figure 3 is a similar view to that of figure 1, the driving pin of the case being removed with the aim of showing a lifting mechanism of the case,
- Figure 4 is a section identical to that of figure 2, the case being in its high position.

A wheel or carrousel escapement mechanism as shown in the figures of the drawings includes (see figure 2 in particular): an adjustable support 1 in the shape of a ring supporting the case 4. The support 1 is attached to a columned support 2, arranged to slide on the two columns 5 and thus allow the raising of the case 4. The columns 5 are attached to a bridge 3, on which the columned support 2 rests when the case is in the low position.

As shown in figure 1, the case 4 is driven by a pinion 6 the height of which is such that the case can be driven equally well when the said case is in the high position and in the low position. In figures 2, 3 and 4, the pinion 6 has been removed in order to make the raising mechanism of the case 4 visible.

On the bridge 3, a lever 8 swivelling on a pin 7 is mounted. The lever 8 has a long part 9 significantly parallel to the case 4, the free end of which presses against the centre of the columned support 2 meeting with axis B of the case (figures 1 and 4).

A pin 10 activated by a push-button not shown presses against the lever 8 which raises the columned support 2 and thus brings the case 4 from the low position to a high position shown in figure 4. The lever 8 makes its upwards movement against the action of a spring 11 arranged to bring the said lever back down when pressure is no longer applied to the push-button activating the pin 10.

A stepped pin 12 attached to the columned support 2 encloses the free end of the lever 8.

Alternatively, the pin 10 can be driven not by the push-button, but by an autonomous control of the timepiece, particularly by a control activating lever 8 at predetermined time intervals, for example every hour.

The mechanism described in figures 1 to 4 functions as follows:

When pressure is applied by the push-button not shown, or by an autonomous control of the timepiece, the pin 10 presses against the lever 8, which is in turn in contact with the underneath of the columned support 2. The lever 8 swivels on its pin 7, and thus raises the columned support 2 guided by the two columns 5.

The case 4 mounted on the support 1 rises along axis B, and reaches its high position, where it is visible under the dial or under the base of the timepiece.

It should be specified here that the case 4 moves up along the pinion 6 and continues to be driven by the said pinion while it is being moved upwards, and also in its high position.

When pressure is no longer applied to the pin 10, the spring 11 returns the lever 8 to its initial position, the free end of the said lever rests on the stepped pin 12, and draws the support 2 downwards until it comes back into contact with the bridge 3. The case then returns to its low position moving along the pinion 6.

The case, which is visible dial or movement side, can thus be brought to a high position where its operation can be examined in detail by the user.

CLAIMS:

1. A timepiece comprising:
 - a wheel with a case having a visible dial or movement side, and which is rotatable by a toothed wheel driven by a pinion;
 - mechanisms by which said case can be moved axially between a low position and a high position; and
 - a lever activated by a push-button or an autonomous control applying pressure on the movement mechanisms of the case, bringing the case to its high position against the action of a spring which brings said case back to its low position.
2. A timepiece according to claim 1, wherein the pinion is of a height such that it can drive the case without interruption as the case moves between its high position and low position.
3. A timepiece according to claim 1 or 2, wherein said mechanisms include a support sliding on columns, the case being mounted on the support by means of an adjustable support.
4. A timepiece according to any one of the preceding claims, wherein the lever is significantly parallel to the case, and moves the centre of the columned support from underneath when it is activated by pressure applied to a pin.

5. A timepiece according to claim 4, wherein a free end of the lever is enclosed between the columned support and a stepped pin, which makes it possible to bring the case back to its low position under the action of the spring when no pressure is applied on the pin.